RANCHO LABS

IHFC | Technology Innovation Hub of IIT Delhi

Game Development

From Players to Creators: Unlock Your Child's Digital Future

Create with **Curiosity**

Your **Gaming** Adventure Begins Here

Learn More

For Grade: 6th to 12th

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About Rancho Labs

Founded in 2019 by IIT Delhi alumni and professors, Rancho Labs is committed to sparking student interest in technology through **hands on learning** in **AI, Coding, and Robotics**. Backed by IIT Delhi's Technology Innovation Hub, we've earned the trust of **10,000+ parents** and **innovators** worldwide with our impactful programs.

4.9/5
Average Rating by Parents

10 +
Research Papers Written

700 +
Innovations Projects

50 +
Competition Winners

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Why Game Development?

Gaming is more than play it's creativity, logic, and innovation. Our program transforms screen time into **future-ready skills:**

- **Design & Build Games** on Roblox Studio
- **Code with Lua** to add mechanics & interactivity
- **Publish & showcase** their very own game

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Learning Outcomes

- Build obstacle courses & immersive worlds
- Learn the fundamentals of **Roblox Studio**, **game design**
- Understand scripting **logic**, **events**, and **functions**
- Master scripting, game physics & mechanics
- Implement **player controls** and **game rules**
- Publish a complete interactive game

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Schedule (2 hours each)

Session 1

Introduction to Roblox & Studio

- What is game Dev
- What is Roblox
- Intro to space Obby (just giving an idea of what we'll be building)
- blox fruit, flash
- camera control

Session 2

Introduction to lua

- Simple obby without lua (Prison Escape)
- Properties - color,material
- Anchoring
- spawn plate and checkpoints
- Object hierarchy and folder organisation
- Parent, child relation (under object hierarchy)
- What is scripting, intro to Lua
- variable, keywords, datatype
- Printing first script

Session 3

Foundations of Game Design & Scripting in Roblox Studio

- toolbox (explore sky, npc , gun etc) add them in your obby
- local vs global variable
- what is server
- naming convention - camel case
- conditions and operators
- triggers and actions
- if else elseif (print simple statements)

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Schedule (2 hours each)

Session 4

Understanding Loops & Timed Actions in Roblox Scripting

- loops
- 3 types of loop - basic , nested , forever
- printing a table
- blinking tile
- wait

Session 5

Introduction to Event-Driven Programming & Game Algorithms in Roblox

- Algorithms
- events and responses
- touch event
- make a simple part disappear
- connect
- destroy
- findfirstchild

Session 6

Working with Colors, Materials & Motion Using Roblox Scripting

- Color3 - how to change colours through scripting (RGB)
- material - enum.material (use enum to get a list of materials in script)
- vector3 - x,y,z - change position and velocity (assembly Linear Velocity)
- change materials and colours using loops

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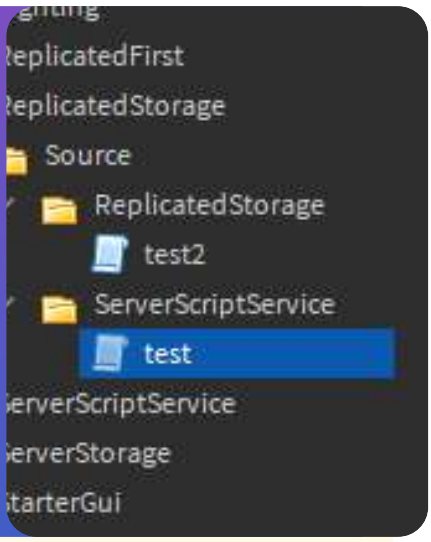
Schedule (2 hours each)

Session 7

Advanced Scripting Concepts: Functions & Programming Principles in Roblox

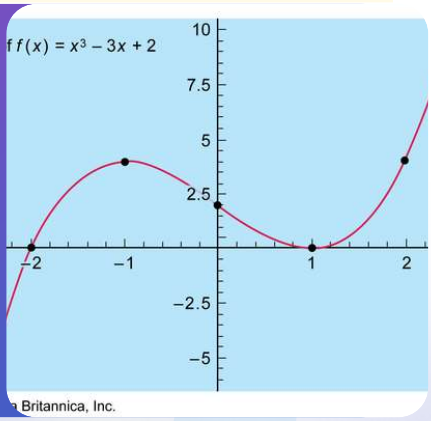
- server script service
- functions
- parameterised functions
- printing sum and simple function
- in built and user - defined function
- polymorphism , abstraction



Session 8

Creative Effects with Functions & Randomization in Roblox

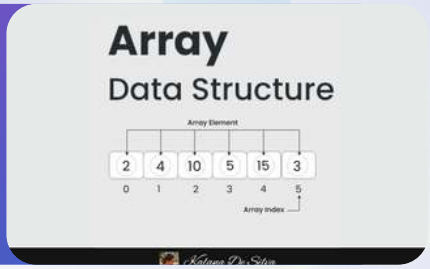
- make few basic function for transperancy and falling tiles
- math.random()
- make a disco part



Session 9

Dynamic Environments

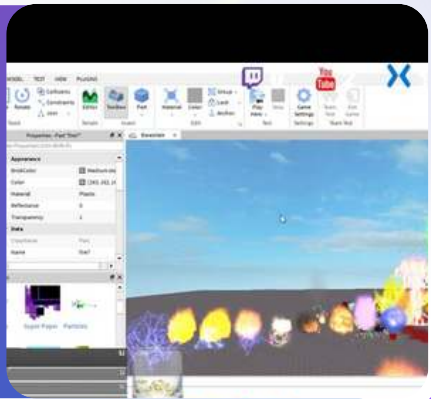
- arrays
- changing material using math.random
- Touch event detailed - falling tile and respawn back



Session 10

Creating Interactive Obstacles & Custom Effects in Roblox

- Kill block
- Instances and effects
- changing position and velocity
- make your own conveyer part



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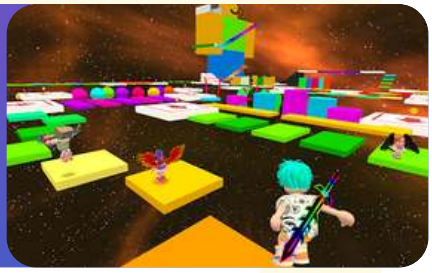
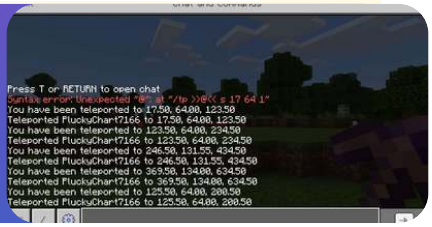
Schedule (2 hours each)

Session 11
Collaborative Project
- Buffer Session - take all doubts
- work on customised obby together



Session 12
Teleportation
- Teleportation block



Session 13
Building a Complete Crossy Road Game with Interactive Hazards
- complete crossy road game in class
- adding killblocks to the car

Session 14
GUI Fundamentals & Interactive Buttons
- Intro to Game UI
- ScreenGui & Frames
- TextLabels
- TextButtons
- Scripting Interactive Buttons

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Schedule (2 hours each)

Session 15
HUD Design (Health, Score, Timer)

- What is a HUD?
- Score Counter
- Health Display
- Timer

Session 16
Multiplayer Logic & Remote Events

- Client-server model
- Remote Events
- Remote Functions
- Replicated Storage

Session 17
Leaderstats and Coin Runner Game

- Leaderstats
- Creating and Updating Leaderstats In-Game
- Adding Coins
- Player win GUI

Session 18
Intuitive Controls & Responsive Movement

- User Input Services
- Understanding Roblox Humanoid Movement
- Intuitive Controls Design (Using User Input Service for keys (e.g., Shift to sprint)

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Schedule (2 hours each)

Session 19
Shop UI and Monetization

- What is monetization (optional - gamepass)
- Instead of robux, use coins from coin runner game
- Shop Gui (Close and open it)
- Buy boosts (e.g., speed or jump) using coin value

Session 20
Escape Room Puzzle (With Clues)

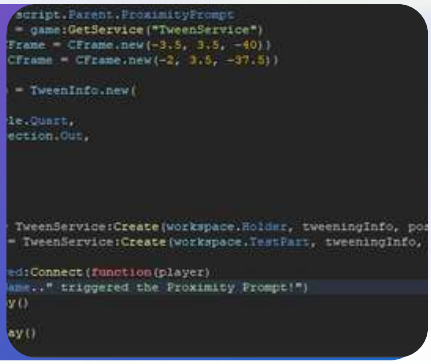
- Rooms with hidden buttons or clues
- Key to open door (maybe use tool)
- Light GUI popups ("You found a clue!")

Session 21
Viewport Frame and minimap

- How to Add a Basic ViewportFrame for an Item
- Add 3d items using ViewportFrame

Session 22
TweenService for smooth UI/UX

- Common UI Effects using TweenService
- Tweening Buttons (Hover Effects)
- Loading spinner



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Schedule (2 hours each)

Session 23

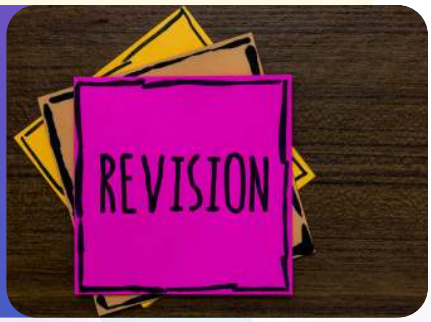
Contextual Buttons (based on state or player interaction)

- Show Button When Player is Near an Object
- Button Text Changes Based on Tool Equipped

Session 24

Buffer Session and Final Game 2 Presentation

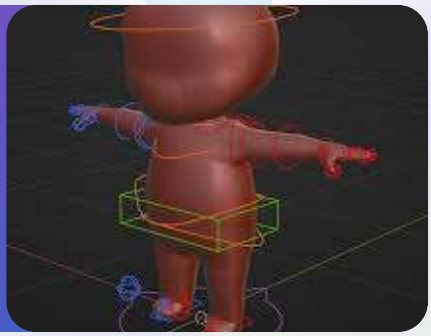
- Revision



Session 25

Rigs

- Using Rigs
- Magnitude, unit
- Creating a pet



Session 26

Race Game

- Team Test
- Use of magnitude
- Race Game

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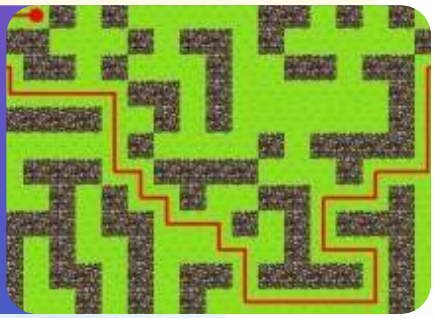
Schedule (2 hours each)

Session 27
Animation Controller

- Rigging & Setup
- Animation Editor
- Keyframes
- Playing Animations through scripting
- Game - create your own emote

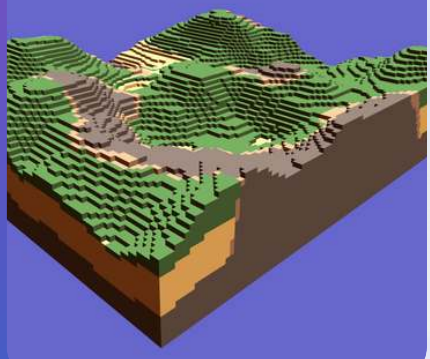
Session 28
NPC/AI Enemies

- Pathfinding Service
- Patrol Between Points
- Chase Player When Nearby



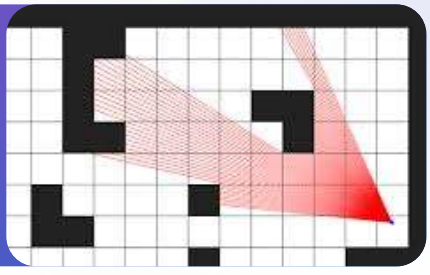
Session 29
Terrain Generation + Lighting

- Terrain Tools
- Painting Terrain
- Lighting Settings(TimeOfDay, Brightness ,Ambient & OutdoorAmbient ,ColorCorrection, Atmosphere)
- Day/Night Cycles



Session 30
RayCast and weapon

- What is Raycasting?
- Creating a Simple Laser Gun - Point and Zap



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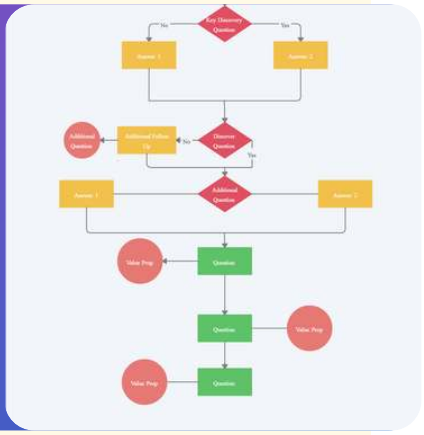
Schedule (2 hours each)

Session 31
Dialogue, Proximity Prompt

- Dialogue Trees Concept
- NPC Rig Setup
- ProximityPrompt / ClickDetector
- Scripting Simple Dialogue Box
- RPG Shopkeeper
- NPC: “Want to buy a sword?”



Session 32
Create your own Grapple Hook

- Grapple Hook
- Rope Constraint Setup
- Raycast

Session 33
Camera Shake and Cutscene

- Camera Shake (using events)
- CutScene

Session 34
Cinematic Spinning

- Spinning in a Circle
- Intro to Angles

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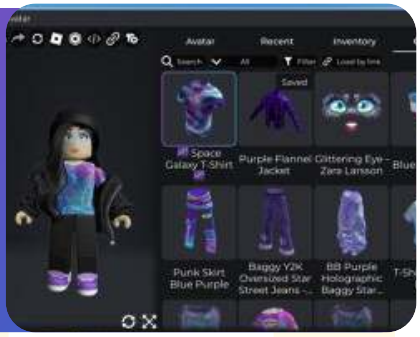
Schedule (2 hours each)

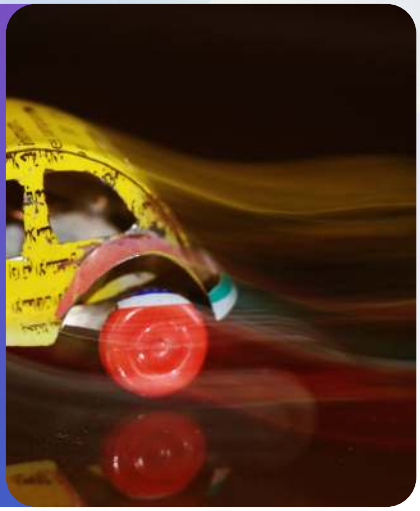
Session 35
Customizing your avatar
- Starter Character Method
- Add Accessories
- Changing Colours of different parts using scripting
- Adding buttons to change shirt



Session 36
Buffer Session and Final Game 3 Presentation
- Doubt Session

Session 37
Audio Feedback & Sound Design
- Adding Sounds in Roblox
- Playing Sounds via Scripts
- Responsive Sound Design Patterns
- Sound Properties
- 3D vs 2D Sound

Session 38
Gyroscopic Car
- BodyGyro & BodyVelocity
- Custom Rotation Logic
- CFrame Orientation
- Camera Follow System
- Obstacle Physics
- Particle Effects
- Respawn/Reset Logic
- Optional UI



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Schedule (2 hours each)

Session 39
Melee Combat System

- Tool Creation
- Hitbox & Raycasting
- Animations
- Damage Script
- Cooldown & Combo Logic
- Prevent spamming
- Sound Effects
- Visual Feedback
- Equipping & Unequipping

Session 40
Color Block Game

- Game Project

Session 41 - 42
Shrink Ray

- Raycasting Basics
- Tool Creation
- Detecting Hits
- Scaling Parts
- Safety & Filtering
- Visual FX (optional)

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Schedule (2 hours each)

Session 43 - 46

Group Game Making

The Haunted Academy

- Genre: Horror / Multiplayer Co-op
- Set in a spooky abandoned school where players must collect clues, avoid a roaming monster, and escape.
- Use proximity prompts, lighting effects, and sound design.

Galactic Delivery Service

- Genre: Racing / Physics / Space Adventure
- Players control flying vehicles or hover pods and deliver packages across dangerous space maps.
- Include fuel systems, boosters, obstacles, and leader boards.

Guardian of the Forest

- Genre: Nature-based Adventure / Survival
- Players are forest spirits who protect nature from corruption.
- Include quests, animal allies, planting trees, and purifying enemies.

Time-Travel Trouble

- Genre: Story / Sci-Fi Adventure
- Players move between different time periods (prehistoric, medieval, future) to solve a timeline crisis.
- Each timeline can change the game mechanics or visuals.

Murder Mystery Mansion

- Genre: Social Deduction / Mystery
- Players attend a party at a haunted mansion where one is secretly the murderer.
- Roles are assigned each round—Murderer, Detective, and Innocents. The murderer must eliminate everyone, the detective must catch them, and innocents must survive or collect clues.

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Schedule (2 hours each)

Session 47

Buffer Doubt Session

- Final polishing and debugging before launch.

Session 48

Final Presentation

- Showcase to parents/mentors

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Certificate of Completion

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TECHNOLOGY INNOVATION HUB OF IIT DELHI

Certificate of Completion

IS AWARDED TO

Misha Abrol

on successful completion in

YOUNG EXPLORERS PROGRAM LEVEL 1

Held from 10th Oct 2022 to 10th Jan 2023 by Rancho Labs backed by Technology Innovation Hub of IIT Delhi (IHFC)

Misha has developed a Smart Agriculture Project. The project is a model that helps to modernize farming for example it checks the soil moisture level, the temperature, humidity and has many more implications.

SAMPLE

ANSHUL AGRAWAL
Co-Founder, Rancho Labs

AMAN KUMAR
Co-Founder, Rancho Labs

Certification by Rancho Labs & Technology Innovation Hub of IIT Delhi

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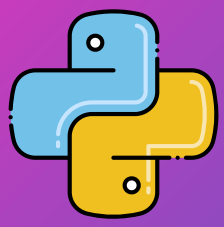
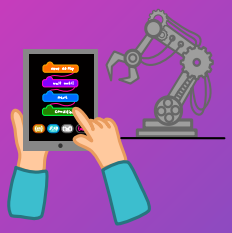


Python and AI

For Grade 6-12



Robotics

For Grade 2-12

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Proof of Excellence

I am incredibly grateful to Rancho Labs and the entire team for providing such an engaging and inspiring robotics program for young minds. My daughter, Ivana Gupta, has truly enjoyed every session. The hands-on learning, the practical exposure, and the encouraging teaching style have sparked a genuine interest for technology in her.
It's been heartening to see her excitement after each class and the confidence she has gained.
Thank you for nurturing curiosity and laying such a strong foundation for the future.

Neha Gupta
Mother of **Ivana Gupta**

Director, PwC India

My son Rinawma, 12 years, is a special needs child. I am so happy to enroll him in Rancho Lab's Robotics class. He enjoys the classes by Dhananjay who's a gentle and patient teacher. I am impressed by the young and energetic staff that have guided us through the registration process and willing to lend a patient ear to all our queries. I am especially pleased that they allow for rescheduling of classes in case I, a working mother, cannot take him to class because of work commitments.

Kooki Ralte
Mother of **Rinawma Chawngthu**

Asst. Professor, Dept of English, PGDAV College, University of Delhi

Rancho Labs has been an incredible learning partner for my son, Bhavik, over the past two years. Their structured approach to teaching coding and AI has not only strengthened his technical skills but also helped him develop logical thinking and a problem-solving mindset. The emphasis on design engineering and real-world applications has given him a strong foundation for the future. We truly appreciate their dedication to nurturing young minds and making learning both engaging and impactful. Thank you, Rancho Labs, for inspiring and empowering the next generation of innovators!

Puneet Arora & Payal Madan Arora
Parents of **Bhavik Arora**

CEO @Advolt Pvt Ltd
CEO@Gofitness

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RanchoLabs

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Where Curiosity Meets Creation!